

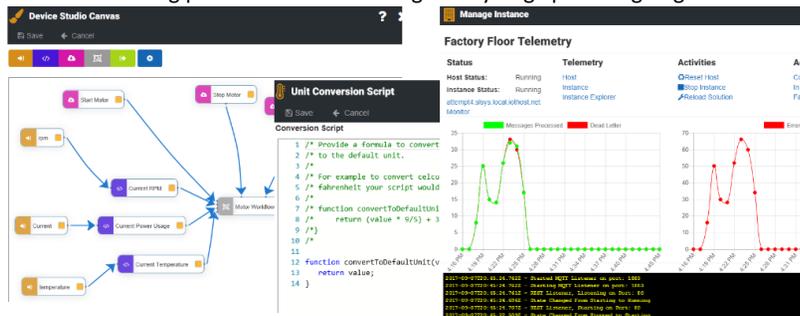
PRODUCT

There are a number of new, interesting and sophisticated technologies that have and will be deployed. The pace at which these technologies will be deployed will only continue to increase. To be most effective, these technologies don't work in a vacuum, they need to be connected. Defining a common standard that all vendors must implement so they can work together will be difficult, time consuming and stifle vendor creativity and productivity. In addition communication requirements for one technology may be different based on form-factor and capabilities.

Currently the effort required to connect even the most simple devices can at best be weeks, and often stretch into months. In most cases this needs to be done before the technology can effectively be evaluated.

What is needed is a technology that can be used to build up applications that not only let these devices communicate, but also provide a mechanism to consolidate, remotely control and configure those devices. In addition as these devices generate data, that data should be archived and made available for future analysis such as machine learning or advanced analytics.

NuvIoT allows you to achieve all these goals and more. Much of which can be done by configuring building blocks and testing protocols and technologies as you go prior to going live.



WHO

- Subject Matter Experts** – Add work flows, connect devices
- Equipment Vendors** – Configure custom messages and protocols
- Technicians** – Configure, assemble and deploy custom integrations/applications
- Developers** – Developers can build custom modules for advanced integration
- Data Scientists** – Build advanced analytics and machine learning models with data from devices
- System Integrators** – Build entire systems that integrate devices from many different vendors
- Warfighters** – One central place to review outputs and control many pieces of equipment
- Leaders** – A consolidated view of readiness, status and performance of equipment



SOFTWARE LOGISTICS
IoT & Mobile Experts

TECHNOLOGY

A web based tool set that lets a non-developer configure:

- Type of sensors/actuators/equipment that need to communicate
- Messages that these devices will send and receive
- Protocols that will be used to transmit and receive messages
- How security should be enforced at the device and message level
- How data should be archived/exported for machine learning and analytics
- Any workflow that should take place based on current device state or message data
- Integration points to include a comprehensive scripting environment and the ability to deploy custom code
- Devices can be provisioned, managed and controlled

Deployment and Management:

- The output of the above configuration can be versioned and deployed
- Can be deployed to the cloud via Docker
- Can be deployed on premise and work independently (coming summer 2018)

User Applications – a web based development is provided to build custom views for access to devices

Currently technology support: AMQP, MQTT, REST, TCP, UDP, Azure IoT Hub, AWS S3, AWS Elastic Search, JSON, XML, Binary, CSV. Additional transports and protocols can be added with minimal effort.

Extensibility: The system has three primary points where it can be extended:

- 1) Creating scripts to respond to workflow events
- 2) Deploying custom message handling modules to do things such as enhanced security, machine learning, custom message processing
- 3) Creating entirely new deployment containers via Docker that perform advanced message handling that can be written in any language

CURRENT STATUS

NuvIoT is currently in the final phases of development with many of its components ready for production. We have a very robust development environment that allows for rapid development and deployment of individual areas of our technology, and it is expected for the foreseeable future we will constantly be evolving the system as requirements are being identified and implemented.

At this time some specific areas of development include an effort to complete our standalone version of our application run time in addition to make it easier for developers to create custom extensions. It's expected that both of these be production ready by end of summer 2018.

NuvIoT can currently publish data to sources such as AWS Elastic Search and Azure to be picked up and used by data scientists for advanced analytics and machine learning. We are in the early phases of defining how to better integrate into data modeling and other artificial intelligence tools.